
MAINTENANCE NOTE 17 (for Electronics Technicians)

Engineering Division

W/OS0321:FJZ

ART-2 Pylon Wiring and Phasing Verification

GENERAL

1. Several field sites have received faulty ART-2 pylons from the National Reconditioning Center (NRC) because of a faulty wiring diagram in the Automatic Radiotheodolite ART-2 Servo Manual. Additionally, electronics technicians (ET) discovered that some pylons shipped from the National Logistics Support Center (NLSC) could not be phased due to the mechanical stop preventing the reference generator from being adjusted.
2. The NRC is now sending a wiring flowchart with each phased pylon describing the correct wiring of the pylon reference generator, associated connectors, and terminals.
3. This maintenance note provides the correct reference generator wiring diagram and the recommended phasing procedure for the ART-2 pylon.

EFFECT ON OTHER INSTRUCTIONS

Make pen and ink changes to the Instruction Manual Automatic Radiotheodolite ART-2, 2R, Maintenance Vol. 2, Figure 7-10, Elevation Assembly 1A2, Wiring Diagram, pages 7-39/40. Pen and ink changes should reflect the proper reference generator wiring diagram as outlined in Figure 2 of this modification note.

PROCEDURE

The following procedures should be observed to verify proper wiring of the ART-2 pylon.

**WARNING**

Turn system power to the OFF position to preclude inadvertent activation of the elevation and azimuth drive assemblies. Inadvertent activation of the elevation and/or azimuth drive assemblies can cause serious injury to personnel.

1. Remove rear cover 1A2A12 on the elevation housing 1A2 by loosening the 14 captive screws (Figure 1).

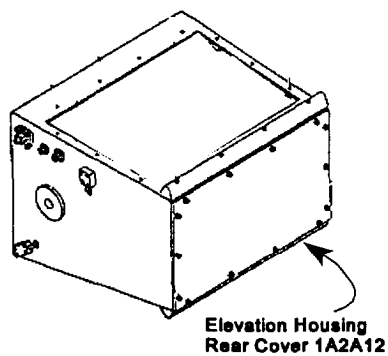


Figure 1
Elevation Housing

2. Locate the pylon reference generator and verify proper reference generator wiring as shown in Figure 2.

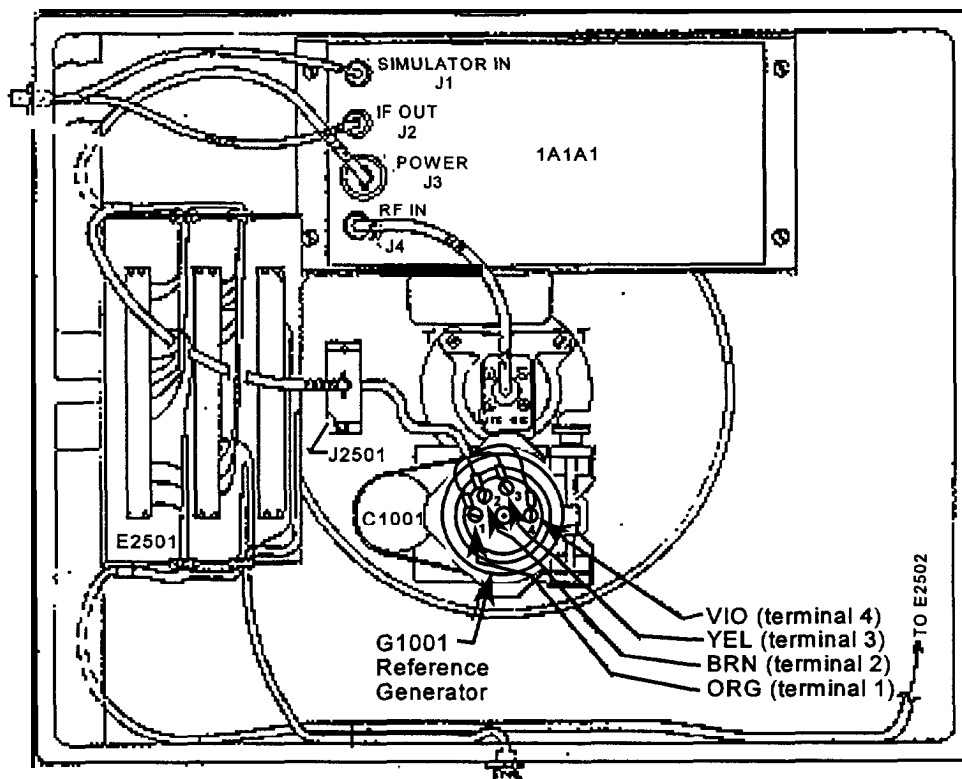


Figure 2
Elevation Assembly
Wiring Diagram

3. Locate J2501 on the back of the pylon. Unplug P2501 and with a digital volt meter (DVM) perform the following continuity checks:
 - a. Set the DVM to the ohm scale.
 - b. Insert the black DVM lead into A3-D on the test panel in the R/ACU drawer.
 - c. Verify that continuity exists (less than 1 ohm) between A3-D and screw terminal 3 on the reference generator.
 - d. Insert the black DVM lead into A4-D on the test panel in the R/ACU drawer.
 - e. Verify that continuity exists (less than 1 ohm) between A4-D and screw terminal 2 on the reference generator.
4. If any of the above tests fail, verify elevation assembly wiring with the wiring diagram in Figure 3.

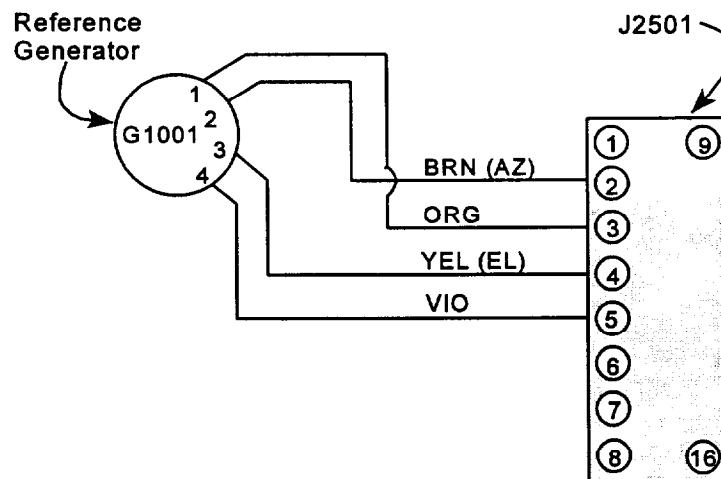


Figure 3
Reference Generator to J2501 Wiring

5. Verify the wiring from P2501 to E2501 in the elevation housing assembly according to the schematics in Figure 4.

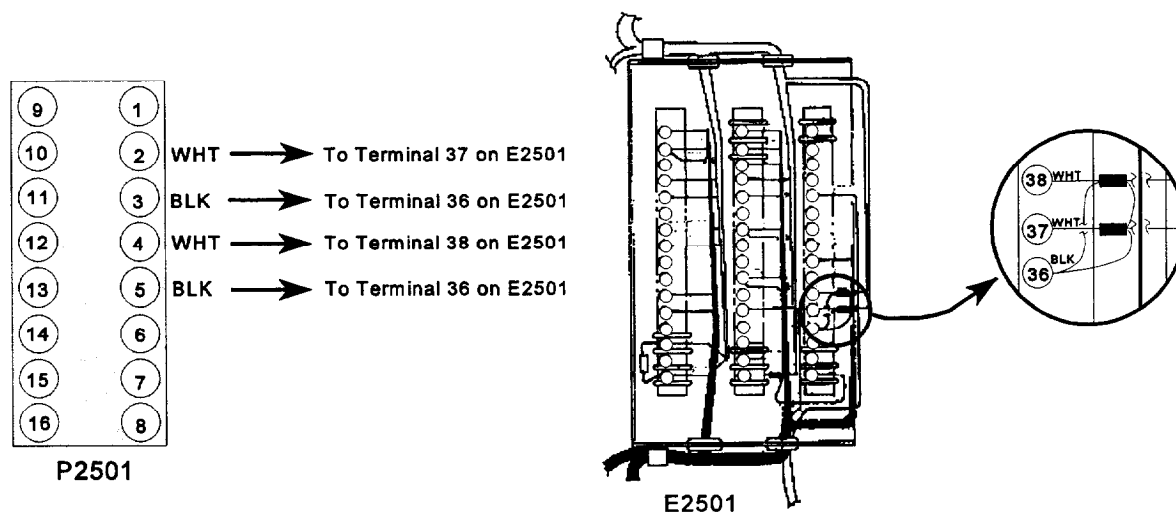


Figure 4
P2501 and E2501 Wiring

6. If any of the wiring schematics in Figures 2, 3 and 4 do not match the sites' ART-2 elevation housing configuration, rewire the elevation housing as specified in Figures 2, 3 and 4.
7. Recheck the wiring with an ohm meter, as detailed in step 3 and verify that all terminal screws on the reference generator and E2501 are tightened properly.
8. Turn target antenna power on.
9. At the R/ACU, turn system power on.
10. At the R/ACU, slew the antenna assembly to the approximate target antenna angles and allow the ART to lock on to the target antenna signal.
11. If the ART antenna locks onto the target antenna signal, wiring in the elevation housing is correctly configured. If difficulties are encountered, confirm the system wiring with drawings in Figures 2, 3, and 4.
12. Replace elevation housing rear cover 1A2A12 with the 14 captive screws.

This completes the ART-2 pylon wiring verification.

NOTE

All ART-1 and ART-2 pylons are now prephased at the NRC. When installing a new pylon, ETs should refer to Engineering Handbook No. 9, section 2.4, Maintenance Note 10, *ART-7 1R Tracking Alignment*, page 10, paragraph 5, System Phasing Adjustment (Reference Generator and A5R16). This part of the tracking alignment will properly adjust R16 on the A5 (Video Amplifier) card and specifies the proper ART-2 phasing procedure.

REPORTING MAINTENANCE

Target date for reporting this maintenance is 30 days after receipt of this maintenance note. Report completed modification on WS Form A-26, Maintenance Record, according to instructions in EHB-4, part 2, using reporting code ART2 (Figure 5).


Acting Chief, Engineering Division

Attachment

WS HQ USE ONLY		WS FORM A-26 (4/94) <small>Supersedes WS Form A-26 and WS Form H-26, which are obsolete.</small>				U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE		Document Number	
General Information		1. Open Date 05 / 03 / 96		Time 0900		2. Initials FJZ		3. Response Priority (check one) <input type="radio"/> Immediate <input type="radio"/> Low <input type="radio"/> Routine <input checked="" type="radio"/> Not Applicable	
		4. Close Date 05 / 03 / 96		Time 1500					
5. Description ART 2 Pylon Wiring and Phasing verification									
Equipment Information		6. Station ID GYX		7. Equipment Code ART2		8. Serial Number 046		9. TM E	
		10. AT M		11. How Mal. 999					
12. EQUIPMENT OPERATIONAL STATUS TIMES		a. Fully Operational 1:00		b. Logistics Delay Partly Operational		c. All Other		d. Logistics Delay Not Operational	
								5:00	
13. Parts Failure Information								14. Work Load Information	
Block #	a. ASN	b. NSN	c. TM	d. AT	e. How Mal.	f. Qty.	g. Maint. Hrs.	Type	Staff Hrs.
1								a. Routine	
2								b. Non-routine	
3								c. Travel	
4								d. Misc.	6:00
5								e. Overtime	
Miscellaneous Information		15. Maintenance Comments Verified wiring and phasing in accordance with maintenance note 17. No problems encountered.							16. Initials FJZ
17. SPECIAL PURPOSE REPORTING		a. Mod. No. M17	b. Mod./Act./Deact Date 05/03/96	c.	d.	e.			
18. CONFIGURATION MGMT. REPORTING (see as directed)		a. Block #	b. Manufacturer's Part No. of New Part					c. Revision No. of New Part	

Figure 5
A-26 Form

ART-1/2 MAINTENANCE NOTE 19 (for Electronics Technicians)

Maintenance Branch

W/OPS12: FJZ

SUBJECT : Audio Radiotheodolite (ART)-1/2 Receiver Alignment

PURPOSE : To provide ART-1/2 receiver alignment procedures

EQUIPMENT AFFECTED : All ART-1/2 systems

PARTS REQUIRED : None

SPECIAL TOOLS REQUIRED :

Type	Manufacturer/Model (or equivalent)
Signal Generator	Marconi 2024
Frequency Counter	M1 Optoelectronics Handicounter
Oscilloscope	Tektronics 465
Digital Voltmeter	Fluke 8050A
Tuning Tools	Standard Field Assortment

MODIFICATION PROCUREMENT : None

SITES AFFECTED : All ART-1 and ART-2 sites

ESTIMATED TIME REQUIRED : 2 Hours

EFFECT ON OTHER INSTRUCTIONS : Make pen and ink changes to the Instruction Manual Number 9-601 (ART-1, 1R Maintenance) and 9-602 (ART-2, 2R Maintenance), Volume 1, pages 5-17, paragraph 5.2.4.2. Enter the following notation:
"Refer to Maintenance Note 19 for ART-1/2 receiver alignment procedure."

AUTHORIZATION : N/A

VERIFICATION STATEMENT : This procedure was tested at the National Weather Service Training Center.

TECHNICAL ASSISTANCE : For questions or problems pertaining to this alignment, please contact Franz J.G. Zichy at 301-713-1833 x128.